APPENDIX L

Biological Assessment

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SLOAN CANYON RESOURCE MANAGEMENT PLAN BIOLOGICAL ASSESSMENT

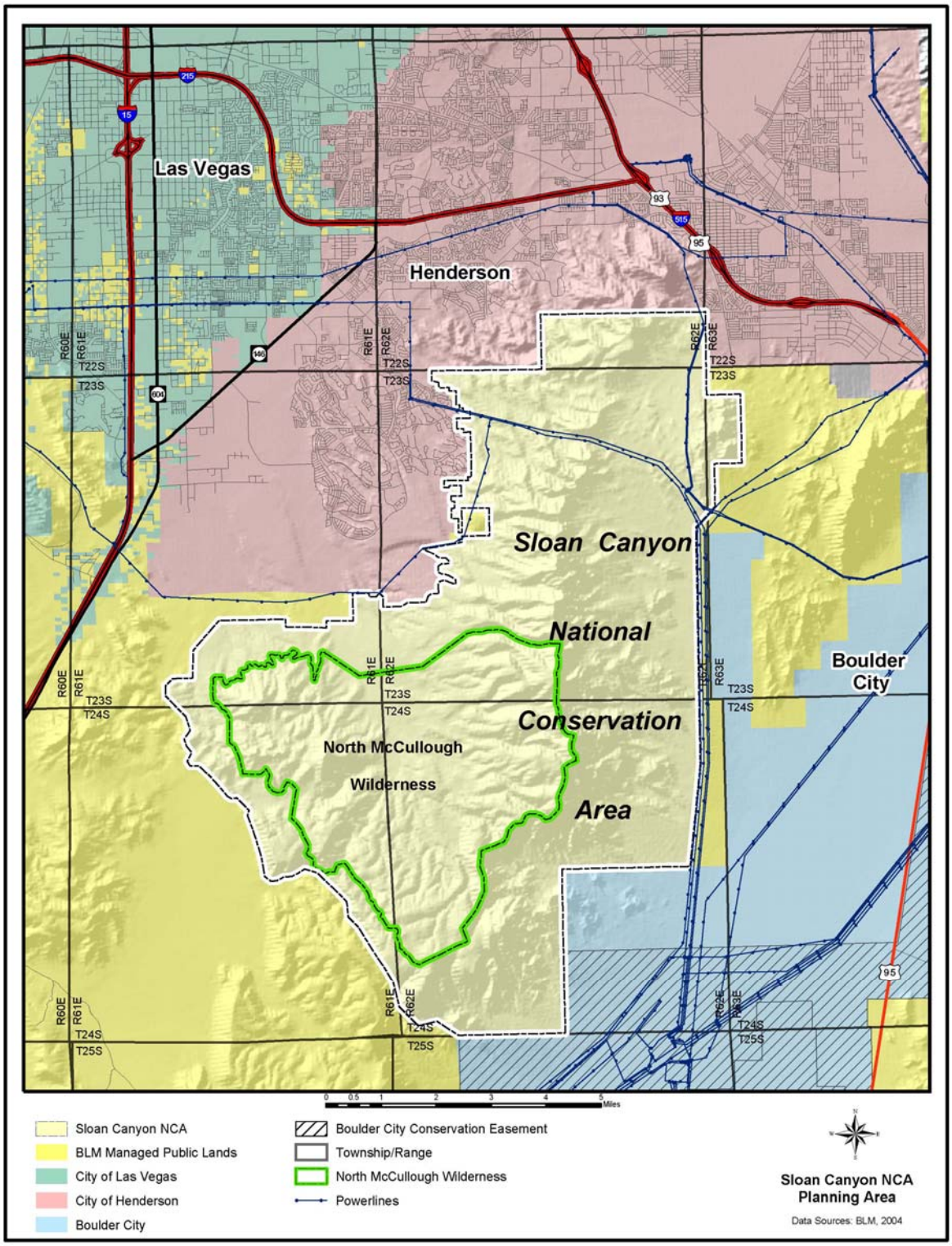
I. BACKGROUND

In November 2002, Congress designated the Sloan Canyon National Conservation Area (NCA) to preserve and protect a portion of southern Nevada's Mojave Desert. The Clark County Conservation of Public Land and Natural Resources Act of 2002 (the Clark County Act) established the Sloan Canyon NCA and the North McCullough Wilderness (the Wilderness), which is entirely contained within the NCA. In addition, Title VI of the Clark County Act, hereafter referred to as the Sloan Canyon NCA Act, directs the Bureau of Land Management (BLM) to manage the NCA in a manner that conserves, protects, and enhances the NCA's resources for the benefit and enjoyment of present and future generations. The Sloan Canyon NCA Act identifies cultural, archaeological, natural, wilderness, scientific, geological, historical, biological, wildlife, educational, and scenic resources as important reasons for the establishment of the NCA. The designation of the North McCullough Wilderness, administered under the Wilderness Act of 1964 and Title II of the Clark County Act ("Wilderness Areas"), requires that approximately 14,763 acres within the 48,438-acre NCA be preserved and protected in their natural, primitive condition (Figure L.1).

The Sloan Canyon NCA Act and Clark County Act, Title II ("Wilderness Areas") set a number of criteria for development of a management plan for the NCA and the Wilderness, including the following:

- **Uses.** Allow only such uses of the NCA as conserve, protect, and enhance the NCA's resources.
- **Motorized Vehicles.** Designate roads and trails for motorized vehicle use; all other roads and trails would be closed to such use except for administrative or emergency purposes.
- **North McCullough Road and Trail Right-of-Way (ROW).** Recommend a location for a ROW to provide the City of Henderson with rural roadway access to the NCA.
- **Non-Motorized Trails.** Convey to the City of Henderson two ROWs for nonmotorized trails.
- **NCA Funding.** Sell nearby public land to fund the conservation and management of the NCA, including the construction of facilities and research on archaeological and geological resources.
- **Litter Cleanup Plan.** Develop a litter cleanup plan and public lands awareness campaign.
- **Grazing.** Allow permitted grazing to continue, subject to all applicable laws, regulations, and executive orders.
- **Mineral Rights.** Withdraw all lands from mineral exploration, leasing, and development, subject to valid and existing rights.
- **Hunting.** Maintain the State of Nevada jurisdiction with respect to hunting and trapping, although these activities may be restricted in established areas and periods for safety or administrative reasons.

Figure L.1. Sloan Canyon NCA Planning Area



The Sloan Canyon NCA Act also declared that no buffer zones or limitations on uses of land outside the NCA are to be established, and the Clark County Act, Title II ("Wilderness Areas") contains directives for management of all 18 wilderness areas designated by the act, including the North McCullough Wilderness.

This Biological Assessment (BA) addresses the biological impacts of the proposed management actions on the federally listed species identified in the Proposed Resource Management Plan (PRMP)/Environmental Impact Statement (EIS) for the public lands managed by BLM in the Sloan Canyon NCA. After the approval of the PRMP via the issuance of a Record of Decision, the management actions would be implemented.

Regulatory Responsibility

The Nevada Division of Wildlife (NDOW) is responsible for the management of wildlife populations within the Sloan Canyon NCA. The BLM Las Vegas Field Office is responsible for managing the habitat and also performs an integral role in sustaining and ensuring the ecological health and viability of the wildlife populations. The U.S. Fish and Wildlife Service (USFWS) provides regulatory oversight for all species that are listed, proposed for listing, or candidates for listing as threatened or endangered under the Endangered Species Act (ESA) and also administers the Migratory Bird Treaty Act, which protects migratory bird species.

Purpose and Need for the Sloan Canyon Resource Management Plan

The purpose of the RMP is to provide guidance for BLM's management of the NCA, consistent with the spirit and intent of the Sloan Canyon NCA Act and other existing statutes, regulations, and policy, including the Federal Land Policy and Management Act of 1976 (FLPMA, 43 U.S. Code [U.S.C.] 1701 et seq.). The RMP planning effort is comprehensive in nature, evaluating existing management plans and resolving or addressing NCA issues identified through agency, interagency, and public scoping efforts. This effort also identifies the area's vision, long-range management goals, objectives, and actions, as well as options for meeting those objectives.

The Draft RMP/EIS evaluated and compared the current management situation (No Action Alternative) and three potential management alternatives, along with their associated environmental consequences. The management alternatives included an alternative that emphasized natural character (Alternative B); one that allows moderate developed use while maintaining natural character (Alternative C); and a third that emphasizes developed uses (Alternative D). In addition, the Draft RMP identified a preferred alternative that was modified as the proposed plan based on input received on the Draft RMP/EIS. Understanding the potential effects of the range of considered management actions would assist BLM in making informed decisions on managing and allocating uses of the land and resources within the NCA.

II. PROPOSED ACTION

The Proposed Management Plan was selected because it serves the purpose of the NCA as described by the enacting legislation and the NCA vision as developed by the interagency planning team. It provides for moderate levels of developed recreation, facilities, and transportation, with management actions to ensure that neither resources nor visitor experiences are unacceptably degraded. Elements of each of the draft alternatives, including Alternative B, the preferred Alternative C, and Alternative D, are included in the PRMP. Table ES-1 in the Executive Summary of the PRMP summarizes and compares key management under the PRMP and the alternatives considered in the Draft RMP (BLM 2005).

Visitor use of the North McCullough Range was low before the designation of the Sloan Canyon NCA and North McCullough Wilderness; however, because of the rapid growth in the Las Vegas Valley, an increase in visitors is expected. To respond to any impact from such an increase in visitors, the Proposed Action contains flexibility that enables adjustments in response to unforeseen pressures from use or resource conflicts.

The Proposed Action focuses on a moderate increase in development while maintaining the natural characteristics of the NCA. Recreational opportunities, such as hiking, mountain biking, and equestrian use and dispersed camping, would be provided. The Sloan Canyon Petroglyph Site, a significant cultural resource, would be accessed mainly from a visitor center at the north end of Sloan Canyon (Figure L.2). Several designated dirt roads would provide access into the NCA.

BLM has identified Management Emphasis Areas that are areas for potential increased development at major access points to the NCA and near the City of Henderson's residential development. The north access to Sloan Canyon, where the proposed visitor center could be located, would be zoned as Developed, and the Petroglyph Management Area would be designated as Semi-Primitive. In addition, the area north of the North McCullough Road and Trail ROW, near the Dutchman Pass Trailhead, would be zoned Roaded Natural, as would the area south of the Quo Vadis Trailhead (Figure L.3).

The Sloan Canyon NCA Act requires BLM to provide access for installing, repairing, maintaining, and reconstructing water developments, including water guzzlers that would enhance the NCA by promoting healthy, viable, and more widely distributed wildlife populations. Currently, the NCA contains two guzzlers, with another directly adjacent to the NCA's southeastern border.

The Sloan Canyon NCA Act directed BLM to grant the City of Henderson a right-of-way (ROW) for the North McCullough Road (N-65874), which is envisioned as a scenic roadway constructed to provide access to the NCA, trailheads, and overlook points. The Act requires BLM to recommend a location for the North McCullough Road as part of this planning process. Based on ground surveys, field visits, impact assessments, and extensive dialogue with City of Henderson planners and engineers, as well as cooperating agencies, BLM recommends the proposed Northern Corridor as the location for North McCullough Road. Any future development related to this scenic roadway-associated trail would require additional environmental review.

III. CONSERVATION MEASURES

BLM would implement a Biological Management Strategy along with implementation of the RMP for the Sloan Canyon NCA. The Biological Management Strategy would address the management of species and their habitats not specifically covered under formal consultation processes. Many of these conservation measures are already being implemented in relation to other federal actions underway in the Sloan Canyon NCA and the surrounding area. Additional conservation measures would be implemented for the listed federal species, the desert tortoise.

Ecosystem Conservation Measures

Ecosystem conservation measures associated with the Biological Management Strategy would include—

- Biological surveys for collection of baseline data on the western chuckwalla (*Sauromalus obesus*). These actions would include visual encounter and scat surveys.
- Blue Diamond cholla and BLM sensitive penstemon species would be protected to avoid habitat fragmentation in areas of facilities development and trail construction.

Figure L.2. Proposed Facilities

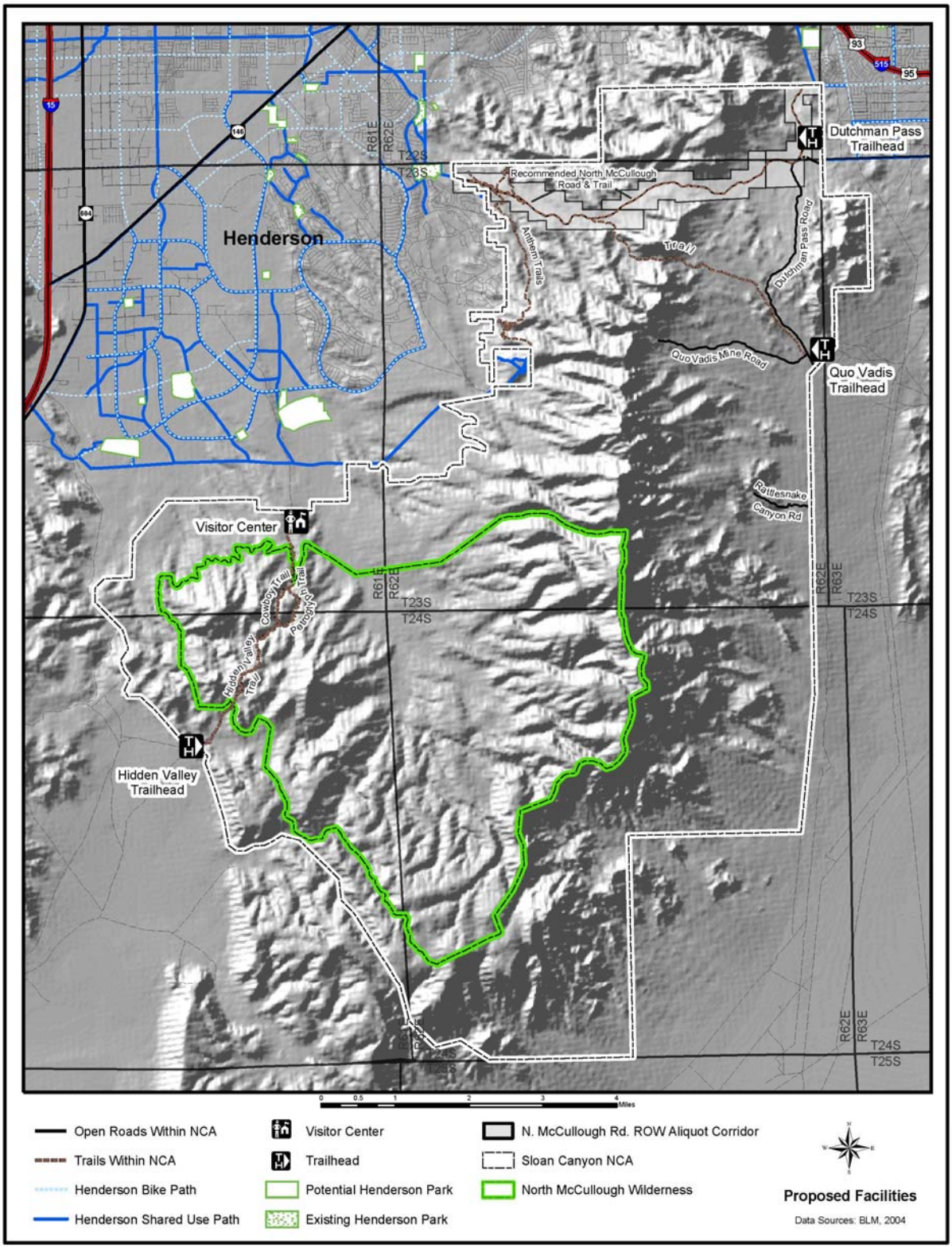
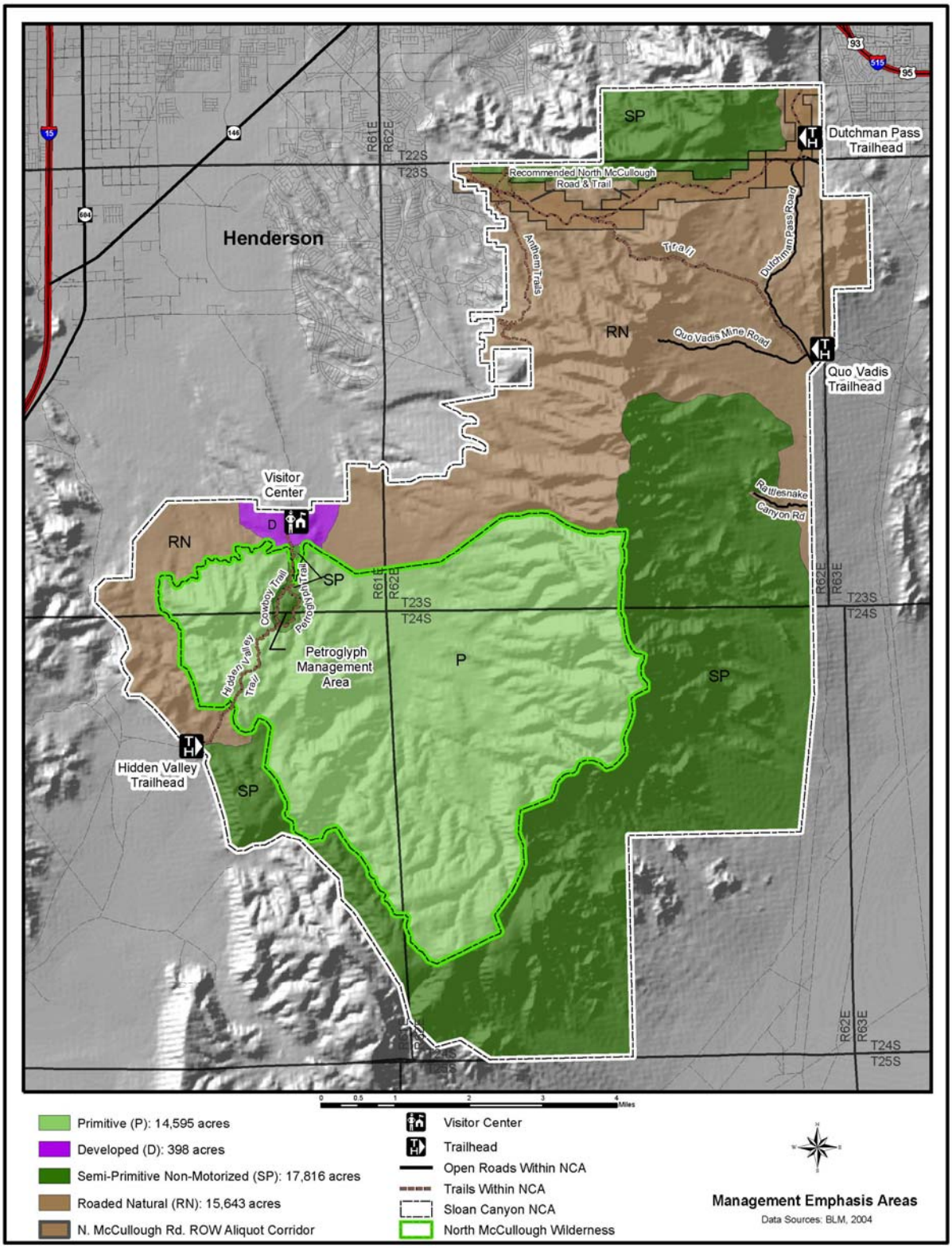


Figure L.3. Management Emphasis Areas



Additional surveys would be considered for:

- Bats and bighorn sheep in consultation with NDOW
- Reptiles—night surveys
- Avifauna nesting and wintering surveys
- Raptor nesting—hawks
- Burrowing owl nesting.

Desert Tortoise Conservation Measures

To minimize the effects of the Proposed Action on the desert tortoise, BLM would implement several protective measures, which are described in the subsections below.

Proposed Measures for All Activities

1) *Speed Limit*: Within Clark County, the speed limit is 25 miles per hour on unposted county roads. This speed would be established for all activities at all times, unless otherwise signed.
2) *Vehicles*: All project- or event-related individuals would check underneath stationary vehicles before moving them.
3) *Vehicle Traffic:* This traffic would be restricted to designated roads, except for emergency- and administrative-related traffic.
4) *Litter Control:* Litter control would be implemented and enforced by BLM. Trash containers would remain covered, must be raven-proof, and must be emptied frequently enough to prevent overflow of materials. Trash, litter, and project debris would be transferred to a designated solid waste disposal facility. Vehicles hauling trash must be secured to prevent litter from blowing out along the road.
5) *Tortoise Mortality/Injury*: BLM Wildlife staff (702-515-5000) and the USFWS (702-515-5230) must be notified of any desert tortoise death or injury in the NCA by close of business of the following work day. In addition, the USFWS Division of Law Enforcement would be notified in accordance with the reporting requirements of the USFWS.
6) *Tortoise Activity*: The period of greatest tortoise activity is generally defined as March 1 through October 31. However, unseasonably warm weather or precipitation outside of this period may result in tortoise activity, particularly by hatchling and juvenile tortoises, and thus warrant adherence to the established requirements for periods of greater activity. Similarly, BLM may determine that additional measures are appropriate for projects planned for the end or beginning of either period if conditions are suitable for desert tortoise to be active.
7) *Education Program*: A BLM- or USFWS-approved biologist (as defined below) would facilitate a tortoise education program for all supervisors, workers, permittees, and other employees or participants involved in projects covered under the RMP. The program would consist of either a presentation or a fact sheet, as determined by project-level consultation between BLM and the USFWS, and would include information on the life history of the desert tortoise, legal protection for desert tortoises, penalties for violations of federal and State laws, general tortoise activity patterns, reporting requirements, measures to protect tortoises, terms and conditions of the Biological Opinion, and personal measures employees can take to promote the conservation of desert tortoises. "Take," which is defined to include any harm or harassment to desert tortoise, including significant habitat modification, would also be explained. Workers and project associates would be encouraged to carpool to and from the project sites. Specific and detailed instructions would be provided on the proper techniques for capturing and moving tortoises that appear onsite, if appropriate, these instructions would be in accordance with the USFWS-

approved protocol. Currently, the USFWS-approved protocol is *Desert Tortoise Council 1994*, as revised in 1999.

8) *Biologist Approval*: BLM and USFWS wildlife staff must approve the biologists who would be assigned to implement the terms and conditions of the Biological Opinion or the permit issued by BLM. Any biologist or firm not previously approved must submit a statement of qualifications in the USFWS-developed format and be approved by the wildlife staff before the person or firm is authorized to represent BLM in complying with the terms and conditions of the Biological Opinion. Other personnel may assist in implementing conservation measures but must be under direct field supervision by the authorized biologist.
9) *Biologist Qualifications*: In accordance with *Procedures for Endangered Species Act Compliance for the Mojave Desert Tortoise* (USFWS 1992), any authorized desert biologist should hold at least a bachelor's degree in biology, ecology, wildlife biology, herpetology, or a closely related field, as determined by BLM and the USFWS. The biologist must have demonstrated a minimum of 60 days of prior field experience using accepted resource agency techniques to survey for desert tortoises and tortoise indicators. All tortoise biologists would comply with the USFWS-approved handling protocol (*Desert Tortoise Council 1994* rev. 1999). In addition, the biologists would have the ability to recognize and accurately record survey results and must be familiar with the terms and conditions of the Biological Opinion that resulted from project-level consultation between BLM and the USFWS.
10) *Tortoises in Harm's Way*: If a tortoise at the project/activity site is found within harm's way, all potentially harmful activity would cease until the tortoise moves or is moved out of harm's way by an authorized biologist. If a desert tortoise is in *imminent danger*, the tortoise would be moved out of harm's way and onto adjacent BLM land using techniques described in the tortoise education program.
11) *Moving Tortoises*: Tortoises that are moved must be placed in the shade of a shrub, in a natural unoccupied burrow similar to the hibernaculum in which it was found or in an artificially constructed burrow in accordance with the tortoise handling protocol. Tortoises encountered would be treated in a manner consistent with the appropriate measures in the Biological Opinion.
12) *Permits*: All appropriate State and federal permits, including NDOW and USFWS permits for handling desert tortoises or their parts must be acquired by the tortoise biologists or other personnel before project initiation and before handling any desert tortoise or their parts or conducting any activity requiring a permit.
13) *Project Oversight*: One or more designated BLM representatives would be responsible for overseeing compliance with the reasonable and prudent measures, terms and conditions, reporting requirements, and reinitiation requirements identified in the Biological Opinion. The designated representative(s) would provide coordination among the permittee, project proponent, BLM, and the USFWS.
14) *Desert Tortoise Burrows*: Burrows would be avoided whenever possible; if such avoidance is not possible, the burrow would be cleared in accordance with the measures set forth in the Biological Opinion.
15) *Heat Stress*: Desert tortoises encountered experiencing heat stress would be placed, by an authorized tortoise biologist, in a tub with 1 inch of 76°F to 90°F water for at least 20 minutes or until heat stress symptoms are no longer evident.
16) *Temperature Restrictions*: Desert tortoises would be treated in a way that ensures that they do not overheat or exhibit signs of overheating (e.g., gaping, foaming at the mouth) and are not placed in a situation in which they cannot maintain the surface and core temperatures necessary to their well-being. Desert tortoises would be kept shaded at all times until it is safe to release them. No desert tortoise would be captured, moved, transported, released, or purposefully caused to leave its burrow for any reason when the ambient air temperature is above 95°F (35°C). Ambient air

temperature would be measured in the shade, protected from wind, and at a height of 2 inches (5 centimeters) above the ground surface. No desert tortoise would be captured if the ambient air temperature is anticipated to exceed 95°F (35°C) before handling and relocation can be completed. If the ambient air temperature exceeds 95°F (35°C) during handling or processing, desert tortoises would be kept shaded in an environment that does not exceed 95°F (35°C), and the animals would not be released until ambient air temperature declines below 95°F (35°C).

17) *Reporting*: Within 30 days of completing a project, the project proponent, permittee, or BLM project lead must submit a document to the BLM wildlife biologist showing the number of acres disturbed, remuneration fees paid, and number of tortoises observed or taken (including captured and displaced, killed, injured, or harassed by other means) during implementation of programmatic actions.
18) *Previous Disturbance*: Overnight packing and storage of equipment and materials, including stockpiling, would be within previously disturbed areas or within areas cleared by a tortoise biologist to minimize habitat destruction.
19) *Project Boundaries*: Project activity areas would be clearly marked or flagged at the outer boundaries before onset of construction. All activities would be confined to designated areas. When new access routes have been identified for development, the tortoise biologist would flag routes before surface disturbance.

Proposed Measures for Actions Involving Ground Disturbance

1) *Blading of Vegetation*: This activity would occur only to the extent necessary and would be limited to areas designated for that purpose by BLM or the tortoise biologist.
2) *Fees*: Before issuance of authorization, and before any surface disturbing activity, BLM or the project proponent would pay an established remuneration fee ($682 per acre of surface disturbance, if paid prior to March 1, 2006). This rate is indexed annually for inflation on the basis of the Bureau of Labor Statistics, Consumer Price Index for All Urban Consumers (CPI-U). Information on the CPI-U can be found on the Internet at *http://stats.bls.gov/news/release/cpi.nws.htm*. An exception to the requirement is made if the disturbance for the project is less than 0.25 acre or if the activities result in a long-term benefit for the species (e.g., trail realignment to minimize habitat impacts).
3) *Notification:* The project applicant/BLM lead would notify the BLM Wildlife staff representative responsible for NEPA review of the project at least 10 days before initiation of a project (702 515-5000).
4) *Clearance*: All project areas, fence lines, and staging areas would be cleared of tortoises by an authorized biologist immediately before the start of ground disturbance using 100 percent coverage survey techniques. During the active tortoise season, an authorized tortoise biologist would be onsite during fence construction to ensure that no tortoises are harmed. Burrows found outside the area to be disturbed would be flagged and avoided. Clearance would involve excavating nests; relocating eggs; flagging avoidable burrows; collapsing unavoidable, unoccupied burrows; and relocating tortoises in accordance with the USFWS-approved protocol for handling desert tortoises (*Desert Tortoise Council 1994* rev. 1999). If disturbance is planned a period when tortoises are not expected to be active, surveys may be conducted earlier, as determined during project-specific consultation.
5) *Fencing*: All tortoise-proof fencing would be at least 18 inches high (above ground level). Fencing may be permanent or temporary, as determined on a project-by-project basis. Temporary fence design should consist of 1-inch mesh or 1-inch horizontal by 2-inch vertical mesh (hardware cloth or plastic may be installed flush with the ground). Temporary tortoise-proof fencing would consist of 1-inch horizontal by 2-inch vertical wire mesh. Where feasible, the

fence would be buried 6 to 12 inches below ground. In situations in which it is not feasible to bury the fence, the lowest 12 inches of the fence would be bent at a 90-degree angle toward the direction from which tortoises are expected to approach the fence, and would be covered with cobble or other suitable material to ensure that tortoises or other animals cannot dig underneath and create gaps through which tortoises can pass.

6) *Clearance Following Fence Construction*: of project activities, all desert tortoises would be removed from the site. An authorized biologist would oversee the survey for and removal of tortoises using techniques providing 100 percent coverage of all areas. Two complete survey passes of 100 percent coverage would be accomplished. If, on the second pass, additional tortoises are encountered, a third pass would be conducted. Clearance of the fenced area would involve activities described in Measure 23 above.

During Ground Disturbing Activities

1) *Fence Inspection/Maintenance*: Fencing would be inspected daily, and zero clearance would be maintained between the bottom of the fence and the ground. Inspections/maintenance would also ensure that any bent portions are properly covered. Additional monitoring and maintenance would include regular removal of trash and sediment accumulation and would check for rodent damage or other breaches when using temporary tortoise-proof fencing.
2) *Onsite Biologist*: Unless the area has been fenced and cleared, or the USFWS and BLM have determined through project-level consultation that an onsite biologist is not necessary, the project would require at least one authorized biologist onsite for project construction during the period of greatest tortoise activity (March 1 through October 31). The biologist(s) should be on-call at other times.

Following Termination of Ground Disturbing Activities

1) *Fence Removal*: Temporary fencing would be removed at the end of the construction activity. Permanent fencing may be removed upon termination and reclamation of the project or when it is determined by BLM and the USFWS that the fence is no longer necessary.
2) *Restoration*: Temporary disturbance areas would be restored in accordance with the restoration protocols for the project.

Proposed Measures for Activities That Involve Maintenance or Modification of Existing Sites and Are Limited to Existing Disturbed Areas Adjacent to Tortoise Habitat

1) *Clearance-Barren/Unsuitable Areas*: All project areas that are barren or unsuitable for tortoises but that occur adjacent to creosote-bursage or Mojave mixed scrub vegetation would be cleared by an authorized biologist before the start of maintenance or modification. Surveys for such clearance would use 100 percent coverage survey techniques, and survey/clearance would be performed no more than 3 days before initiation of construction. Areas within blackbrush would be cleared only if reconnaissance surveys reveal tortoise sign within the project area.
2) *Fence High-Risk Areas*: If activities are expected to occur during the tortoise active season, and it is determined there is a high risk to tortoises (e.g., a tortoise has been found within 1,000 feet of the project area or heavy machinery is used), the project area would be fenced with tortoise-proof fencing in accordance with Measures 23, 24, 25, 26, and 27) above.
3) *Onsite Biologist*: Unless the project area has been fenced and cleared, a survey has been conducted and determined that no tortoises or active burrows are within 1,000 feet of the project

area, or the USFWS and BLM have determined an onsite biologist is not necessary, the project would require an authorized biologist(s) onsite for project construction during the period of greatest tortoise activity (March 1 through October 31), and on call at other times.

Proposed Measures for Commercial, Filming, or Research/Monitoring Permits

1) *Unauthorized Introductions*: The permittee would not damage, collect, or introduce plants or animals to any location, unless specifically permitted by BLM.
2) *Existing Disturbance*: All motorized vehicles, parking, and activities are restricted to designated roads and existing disturbed areas. No additional ground disturbance would be allowed.
3) *Marking/Infrastructure*: No painting of rocks, establishment of permanent markers, or installation of permanent infrastructure is allowed as part of these activities.
4) *Removal of Materials*: The applicant is responsible for removing any project-related materials, such as flagging and markers, immediately after any event or activity.
5) *Compliance*: If the project involves studies affecting species protected by the Migratory Bird Treaty Act or ESA, before research, inventory, or monitoring, proof of the USFWS permit authorizing this activity must be provided to BLM at:

Bureau of Land Management Renewable Resources
Attn: Wildlife Staff
4701 North Torrey Pines Drive
Las Vegas, Nevada 89130

6) *Reports*: Reports would be submitted to the BLM Wildlife staff representative at the end of the permit period (or annually, for multiple-year permits) showing the number of desert tortoises injured, killed, collected, encountered, or moved as a result of the permitted activity. Additional information for collections and research permits should include geographic coordinates or geographic information system (GIS) coverage of the collection sites and the number and location of species collected in association with the permitted activities.
7) *Provide Data*: For research, inventory, or monitoring to collect data on desert tortoises, a copy of the study results, including any management recommendations, would be submitted to the USFWS and BLM Wildlife staff representative upon completion of the project, to aid in recovery and future management of the tortoise and its habitat.
8) *Weed-Free Hay*: Only certified weed-free hay may be used by permittees and participants associated with equestrian use.
9) *Temporary Water Troughs*: Any temporary water troughs would be removed at the conclusion of the event. If troughs are drained onsite, they would be drained in such a way as to minimize disturbance of natural wash systems.

Proposed Measures for Restoration Activities and Mechanical Weed Treatments

1) *Clearance*: All sites including cross-country access routes and staging areas would be cleared in accordance with Measures 23 and/or 30.
2) *Onsite Biologist or Fence/Clearance*: For restoration actions and weed treatment, when mechanical treatments are employed, an authorized biologist must be present during periods of tortoise activity (generally from March 1 through October 31) to ensure that desert tortoises are not inadvertently harmed. As an alternative to having a biologist onsite, the area may be temporarily fenced with tortoise-proof fencing. If temporary fencing is constructed, the fence

line would be surveyed by a tortoise biologist before construction of the fence. The area within the fence would be surveyed for, and cleared of, desert tortoises after construction of the fence to ensure that no tortoises are trapped inside the fence.

3) *Project Access, Vehicles*: All vehicle traffic would be restricted to designated roads, except for traffic for emergency or administrative purposes, in which new access routes would be created only when absolutely necessary and for which disturbance would be minimized by using the least disruptive tool that can accomplish the job. If there is no existing access to the site, it would not be treated or restored unless it is a hazard to desert tortoises (e.g., pits or holes that might trap animals).

Proposed Measures for Wildlife Management Activities

1) *Vehicle Access*: All vehicle use in desert tortoise habitat for these actions would be restricted to designated roads and trails. No new access roads would be created.
2) *Disturbance*: Activities that involve ground disturbance, such as installation of water sources, fences, or other infrastructure, would comply with the proposed measures for ground disturbing activities.

Limitations and Standard Operating Procedures For Casual/Dispersed Recreation

1) *Special Recreation Permits (SRP)*: SRPs would be issued for commercial trail guiding operations on a case-by-case basis.
2) *Hiking:* Cross-country hiking would be allowed throughout the NCA until trails are designated and constructed, after which time hikers would be required to stay on trails in the areas of the NCA, as designated in the RMP (Area L) (Figure L.4). Cross-country hiking would continue to be allowed in other areas.
3) *Equestrian Use*: Cross-country equestrian use would be allowed until trails are designated and constructed, after which time equestrian users would be required to stay on trails in the areas of the NCA, as designated in the RMP. Cross-country equestrian use would continue to be allowed in other areas (Figure L.5).
4) *Mountain Biking*: Use of mountain bikes is restricted to the designated roads or trails. Cross-country mountain bike use, as well as use within the North McCullough Wilderness, is prohibited (Figure L.6).
5) *New Trails*: No new trail development is permitted without BLM authorization. An interdisciplinary BLM team would review all new construction.
6) *Trail Monitoring*: All trails would be monitored, and additional protective measures would be implemented as needed.
7) *Cross-Country Travel*: Occasionally, unauthorized cross-country driving or vehicle-dumping occurs within the NCA. These incidents are typically handled by law enforcement through such means as vehicle recovery and photography. In some cases, the recovery actions can create a greater degree of habitat disturbance than did the initial trespass action; however, these actions are pursued, with restoration at the cost of the trespasser.

Figure L.4. Hiking

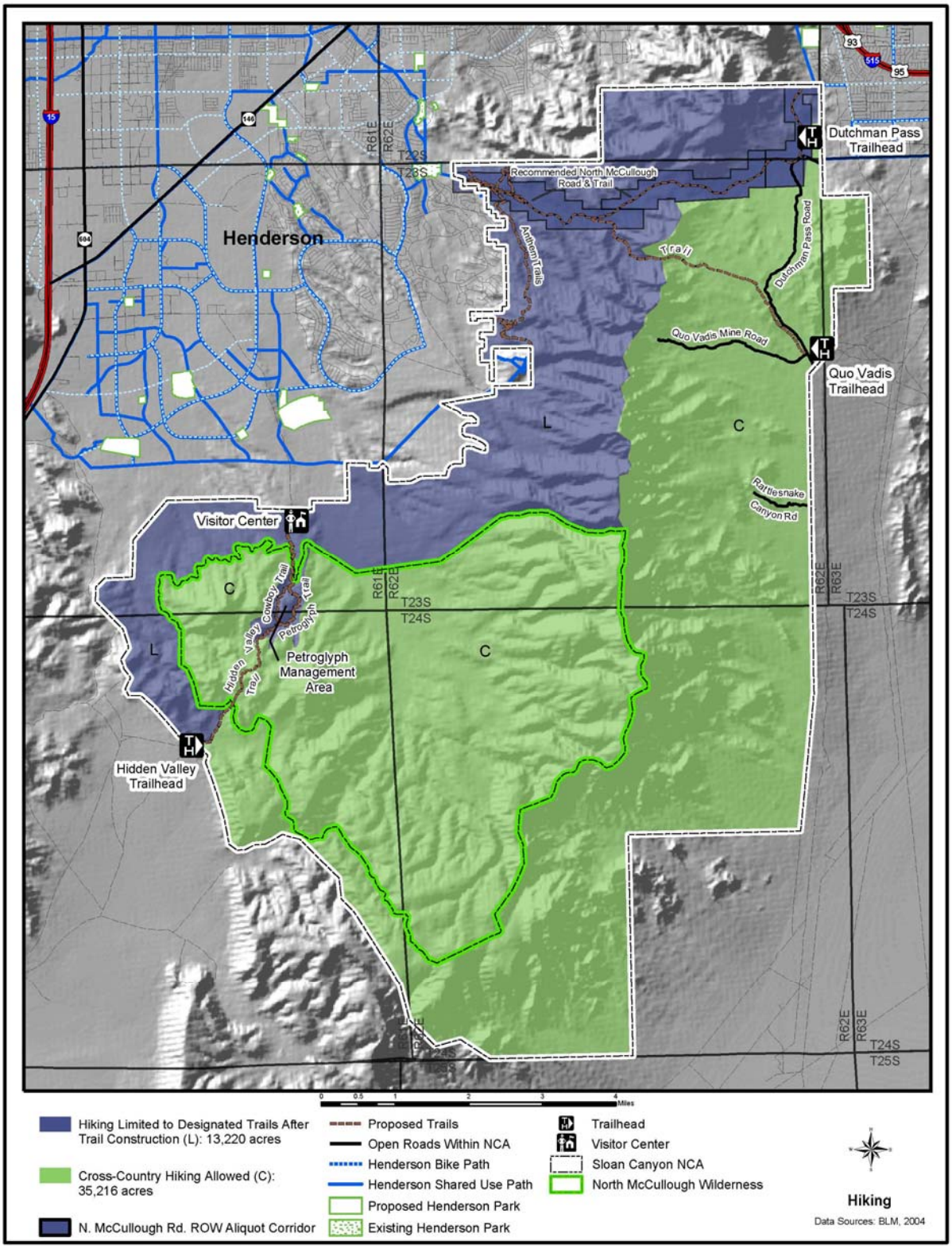


Figure L.5. Equestrian Use

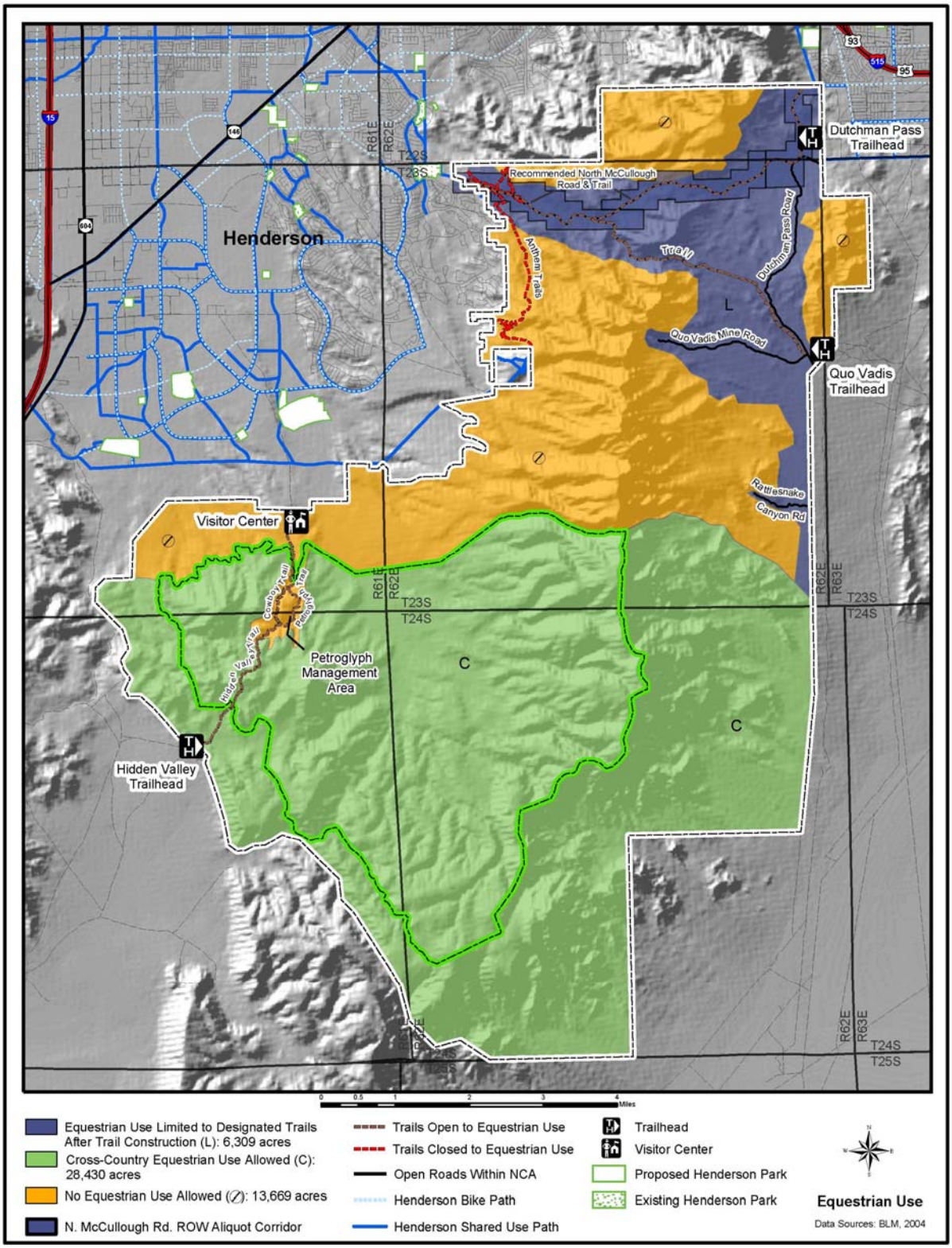
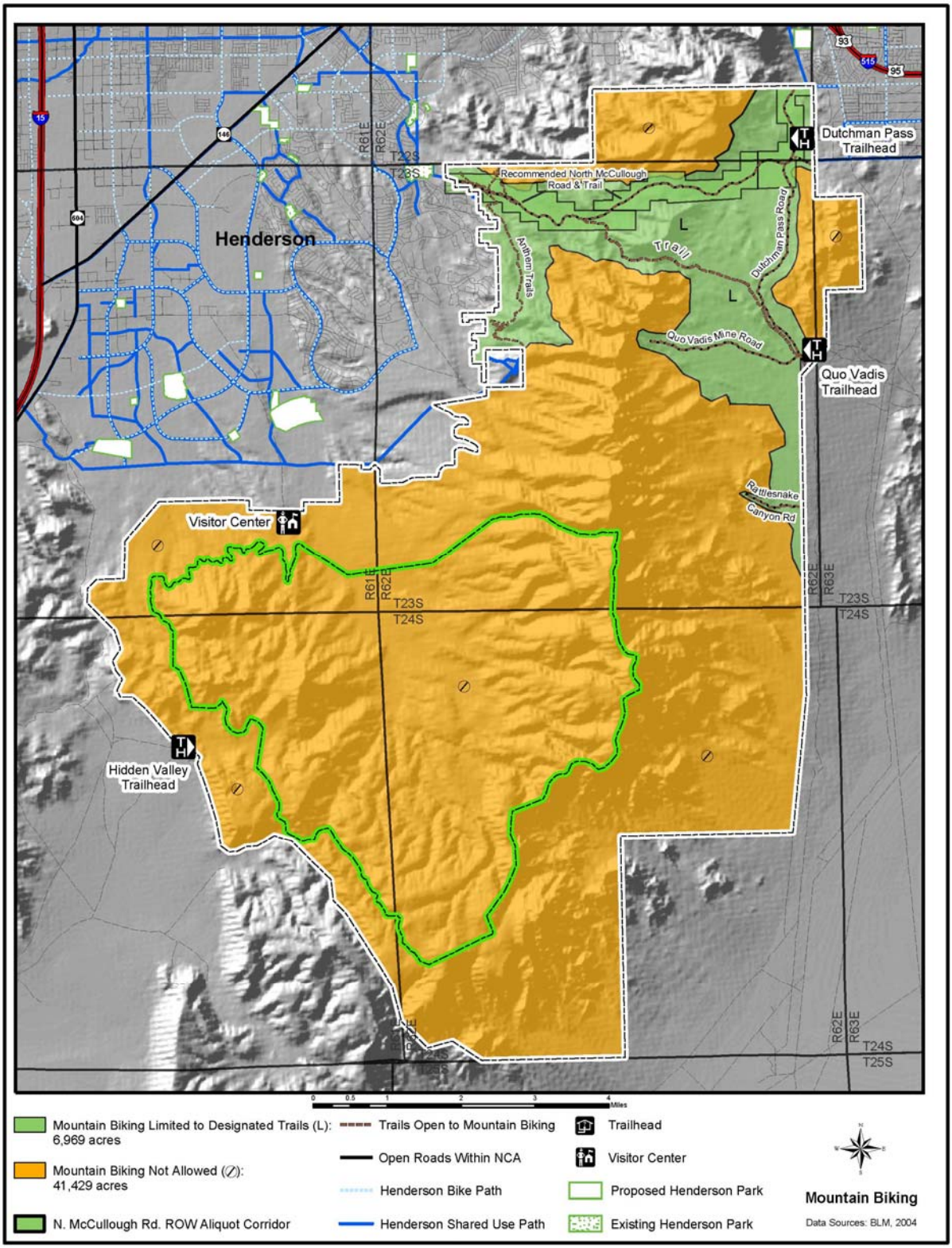


Figure L.6. Mountain Biking



IV. AFFECTED ENVIRONMENT

The Sloan Canyon NCA encompasses the northern portion of the McCullough Range. It lies southeast of the City of Las Vegas and borders the City of Henderson. Volcanoes formed the McCullough Range, and a long basalt spine dominates the topography within the NCA. The eastern slopes of the range are steeper than the western slopes. Elevations within in the NCA range from about 1,800 feet on the southern border to 5,000 feet at Black Mountain.

Archaeological evidence suggests that humans have used the NCA resources for the past 7,000 years. Numerous rock art exists in the NCA, and they are of cultural importance to native peoples.

The NCA supports a variety of wildlife, including desert bighorn sheep, mountain lions, Gila monsters, and the threatened desert tortoise. Two artificial wildlife water locations (guzzlers) were developed within the NCA through cooperative efforts of BLM, the NDOW, and private conservation groups interested in improving habitat for bighorn sheep and other wildlife species. NDOW anticipates maintaining these guzzlers for future wildlife use.

Recreation is becoming a common use of the North McCullough Range. As urban growth in the Las Vegas Valley has enveloped the northern portion of the NCA, hiking, mountain biking, and off-highway vehicle (OHV) use have become common. The southern portion of the NCA contains the North McCullough Wilderness. The rugged character of this southern area limits access and, as a result, receives relatively low visitation. The primary concern with public access is disturbance of the existing landscape and habitats.

Within the NCA, approximately 40 ROWs are on file for power lines, flood control facilities, access roads, and communication equipment in the project area. The Sloan Canyon NCA Act withdraws the NCA and Wilderness from mining entry and establishment of new claims. There were 11 existing mining claims located within the NCA boundary at the time of enactment.

Annually, NDOW issues limited entry permits for the hunting of bighorn sheep in the North and South McCullough Range, which includes the NCA (NDOW 2003). Bighorn sheep hunting licenses are issued based on population dynamics and recommendations from NDOW and Clark County Wildlife Advisory Board. The NDOW also permits recreational hunting for bobcats and mountain lions, rabbits, dove, quail, and coyote, as well as trapping for coyote, bobcat, gray fox, and kitfox.

Of the State's 54 native reptile species, 36 may be commercially collected in the State of Nevada through issuance of a permit from NDOW (Nevada Department of Conservation and Natural Resources [NDCNR] 2002). There are concerns about the potential impact of this collection on total population numbers and the potential for species integrity to be diminished as large reptiles are harvested; however, baseline population and distribution data are lacking for most reptile species, making it difficult to determine long-term effects of commercial collecting and unlimited reptile harvesting on reptile populations (NDCNR 2002).

Planning Area Vegetation

The Mojave Desert scrub community in the Sloan Canyon NCA is primarily composed of low, widely spaced shrubs, including the creosote bush (*Larrea tridentata*) and the white bursage (*Ambrosia dumosa*). Other affiliated community shrubs include ephedra (*Ephedra* spp.); brittlebrush (*Encelia virginensis*); burro bush (*Hymenoclea salsola*); sweetbush, or bebbia (*Bebbia juncea*); and desert saltbush (*Atriplex polycarpa*). Characteristic species associated with the Mojave Desert include Mojave yucca (*Yucca*

s*chidigera*), teddybear cholla (*Opuntia bigelovii*), and hedgehog cacti (*Echinocereus* spp.). Short-lived annual and perennial wildflowers appear at the lower elevations in late March, April, and May, when prompted by winter rains.

Vegetation Associations

Four vegetation associations are represented within the Sloan Canyon NCA: (1) volcanic basalt slope associations, (2) moderate creosote (greater than 30 percent cover), (3) sparse creosote/bursage mix, and (4) desert wash associations (BLM 2004e). Vegetation association descriptions are listed below. The distribution of vegetation associations within the NCA is presented in Figure 3.10.

Volcanic Basalt Slope Association

The volcanic basalt slope association is found on the steeper north-facing slopes of the NCA. This association contains basalt rock outcrops, and the plant species composition is highly variable. Creosote is present in most of this vegetation association; however, north-facing slopes may lack creosote canopy cover. Shrub species present include creosote (*Larrea tridentata*), ephedra (*Ephedra spp.*), prickly pear (*Opuntia spp.*), and perennial and annual grasses and forbs.

Moderate Creosote

The moderate creosote association is dominated by creosote (greater than 30 percent canopy cover) and also contains bursage (*Ambrosia dumosa*), ephedra (*Ephedra spp.*), and in some areas a significant amount of Cholla cactus (*Opuntia spp.*). The moderate creosote association has a limited distribution within the NCA and may be associated with increased soil moisture availability. Saltbush (*Atriplex spp.*) and perennial and annual grasses and forbs are also associated with the moderate creosote association.

Sparse Creosote/Bursage Mix

The sparse creosote association is the most abundant association within the Sloan Canyon NCA. The sparse creosote vegetation association is an open sparse plant association dominated by creosote bush (*Larrea tridentata*). Ephedra (*Ephedra*), bursage (*Ambrosia dumosa*), and saltbush (*Atriplex spp.*) are also common shrub species in the sparse creosote association. The canopy cover of vegetation in this association is typically less than 30 percent, and desert pavement dominates some areas. Annual and perennial grasses and forbs are also present.

Desert Wash Associations

Desert washes within the Sloan Canyon NCA are ephemeral watercourses that are dry most of the year. The increased quantity of available water, even for brief periods, in desert washes supports vegetation that differs from that of adjoining plant associations in species composition, structure, and soil moisture availability.

Most occurrences are at elevations lower than 5,000 feet within sandy arroyos, washes, and subirrigated bajadas. Dominant species include cat claw (*Acacia greggii*), desert willow (*Chilopsis linearis ssp. arcuata*), Mormon tea (*Ephedra spp.*), and indigo bush (*Psorothamnus fremontii*).

V. STATUS OF FEDERALLY LISTED SPECIES

The NCA includes habitats composed of plant communities that support a wide variety of desert-associated animal species; however, it contains only one federally listed wildlife species—the desert tortoise (*Gopherus agassizii*).

Desert Tortoise

The desert tortoise (*Gopherus agassizii*) is a large, herbivorous reptile found in portions of the California, Arizona, Nevada, and Utah deserts. It also occurs in Sonora and Sinaloa, Mexico. In California and southern Nevada, the desert tortoise is found primarily within the creosote, shadscale, and Joshua tree vegetation community. The desert tortoise is also found in the Lower Colorado River subdivision of the Sonoran desert scrub vegetation community. Optimal species-range habitat has been characterized as Mojave Desert scrub, creosote bush scrub, and blackbrush communities in valleys and on bajadas and hills below 4,500 feet, where precipitation ranges from 2 to 8 inches, diversity of perennial plants is high, and production of ephemeral plants is high (Luckenback 1982, Turner and Brown 1982, Schamberger and Turner 1986, RECON 2000).

Soils should be friable enough to allow the tortoises to dig burrows and firm enough so that the burrows do not collapse. In southern Nevada and California, desert tortoises are typically associated with gravelly flats or sandy soils with some clay, and are occasionally found in windblown sand or in rocky terrain (Luckenback 1982). Desert tortoises have been found in California from below sea level to an elevation of 7,300 feet, but the most favorable habitat occurs at elevations of about 1,000 to 3,000 feet (Luckenbach 1982, Schamberger and Turner 1986). Within Clark County the preferred elevation range of the desert tortoise is below 4,500 feet (RECON 2000).

Desert tortoises are most active in southern Nevada during the spring and early summer in association with annual plant development. Activity increases again during the warm fall months and occasionally after summer rainstorms. Desert tortoises spend the remainder of the year in burrows, escaping the extreme conditions of the desert. Although they spend most of their lives in burrows or caves, the tortoises will become active in suitable weather at any time of the year; rainfall, particularly during the summer, often initiates activity. Young desert tortoises are more likely to be active in less suitable weather than are adults (Wilson 1999). Further information on the range, biology, and ecology of the desert tortoise can be found in Burge (1978), Burge and Bradley (1976), Hovik and Hardenbrook (1989), Luckenback (1982), Weinstein et al. (1987), and USFWS (1994).

The Mojave population of the desert tortoise includes those animals living north and west of the Colorado River in the Mojave Desert of California, Nevada, Arizona, and southwestern Utah, and in the Colorado Desert of California. On August 4, 1989, the USFWS published an emergency rule listing the Mojave population of the desert tortoise as endangered (54 *Federal Register* 32326). In its final rule, dated April 2, 1990, the USFWS determined the Mojave population of the desert tortoise to be threatened (55 *Federal Register* 12178). Critical habitat for the desert tortoise in portions of California, Nevada, Arizona, and Utah is identified in a final rule published February 8, 1994 (59 *Federal Register* 5820). Following the recommendations of the Desert Tortoise Recovery Team, the final rule designating critical habitat established six recovery units over the range of the Mojave population of the desert tortoise. The six recovery units are—

- Northeastern Mojave
- Eastern Mojave
- Northern Colorado

- Eastern Colorado
- Upper Virgin River
- Western Mojave.

Within the recovery units, the USFWS defined at least one critical habitat unit patterned after the Desert Wildlife Management Area (DWMA) concept recommended by the recovery team. A total of 14 DWMAs have been delineated within the six recovery units. A final recovery plan for the desert tortoise was published by the USFWS in June 1994.

The desert tortoise was listed in response to loss and degradation of habitat caused by numerous human activities, including urbanization, agricultural development, military training, recreational use, mining, and livestock grazing. The loss of individual desert tortoises to increased predation by common ravens (*Corvus corax*), collection by humans for pets or consumption, collisions with vehicles on paved and unpaved roads, and mortality resulting from diseases also contributed to the USFWS's listing of this species.

The 1994 Recovery Plan outlines the basis and key strategy for recovery and delisting of the desert tortoise (USFWS 1994). The plan divides the range of the desert tortoise into six distinct population segments or recovery units and recommends establishment of 14 DWMAs throughout the recovery units. Within each DWMA, the recovery plan recommends implementation of reserve-level protection of desert tortoise populations and habitat, while maintaining and protecting other sensitive species and ecosystem functions. As part of the actions needed to accomplish recovery, land management within all DWMAs should restrict human activities that negatively affect desert tortoises (USFWS 1994).

The Sloan Canyon NCA, located within the Northeastern Mojave Recovery Unit, does not lie within any of the DWMAs. The Northeastern Mojave Recovery Unit occurs primarily in Nevada but also extends into California along the Ivanpah Valley and into extreme southwestern Utah and northwestern Arizona. Vegetation within the Northeastern Mojave Recovery Unit is characterized by creosote bush scrub, big galleta-scrub steppe, desert needlegrass scrub-steppe, and blackbrush scrub in the higher elevations.

Within the recovery unit, the topography is varied, ranging from flats to valleys, alluvial fans, washes, and rocky slopes. Much of the area is characterized as basin and range at elevations from 2,500 to 12,000 feet, with primary desert tortoise habitat located below 4,500 feet. Desert tortoises in the Northeastern Mojave Recovery Unit are at their northernmost distribution and are typically found at low densities of 10 to 20 adults per square mile.

Critical habitat is designated by the USFWS to identify the key biological and physical requirements of the species and key areas for recovery, and focuses conservation actions in those areas. Critical habitat is composed of specific geographic areas that contain the biological and physical attributes, such as space, food, water, nutrition, cover, and shelter, essential to the species' conservation within those areas. These features, known as constituent elements, are sufficient space to support viable populations within each of the six recovery units and to provide for movement, dispersal, and gene flow; sufficient quality and quantity of forage species and the proper soil conditions to provide for the growth of these species; suitable substrates for burrowing, nesting, and overwintering; burrows, caliche caves, and other shelter sites; sufficient vegetation for shelter from temperature extremes and predators; and habitat protected from disturbance and human-caused mortality. None of the project area includes identified desert tortoise critical habitat.

Threats to the Desert Tortoise

The Sloan Canyon NCA lies within Clark County, Nevada. Known and potential locations of desert tortoise habitat within the county are identified in the *Clark County Multiple Species Habitat Conservation Plan and Environmental Impact Statement* (Clark County 2000). This document identified threats to the desert tortoise as being either at an *ecosystem level* or *species specific*. Ecosystem-level threats in Clark County include competition for food by other herbivores such as cattle and horses; habitat degradation by livestock grazing and trampling; habitat degradation and wildlife displacement from extraction of minerals; reduction of wildlife populations through road mortality; habitat modification and degradation and wildlife mortality from competitive OHV races; habitat modification and degradation and wildlife mortality from noncompetitive, noncommercial OHV activities, including use of wash habitat; habitat degradation resulting from urban and rural development; habitat fragmentation by urban/rural development; habitat fragmentation by roads and trails; provision of perch sites for ravens; and raven predation of young. Species-specific threats include upper respiratory tract disease, possibly caused by release of captive tortoises, and poaching, illegal collection, or killing of flora and fauna.

Plant Species of Concern

Three Nevada State Sensitive and BLM Special Status Plant Species are located within the Sloan Canyon NCA: the rosy two-tone beardtongue *(Penstemon bicolor* ssp. *roseus),* the white-margined penstemon *(Penstemon albomarginatus),* and the Blue Diamond cholla (*Opuntia whipplei* var. *multigeniculata*). These species have been identified to occur within or adjacent to the Sloan Canyon NCA (Bostick 1973; Marrs-Smith, personal communication 2004). The Blue Diamond cholla is also a USFWS Candidate Species for listing on the USFWS endangered species list (Table L.1).

Table L.1. Sensitive Plant Species within the Sloan Canyon NCA

Common Name	Scientific Name	Characteristics Federal and State of Nevada Status
Blue Diamond cholla	*Opuntia whipplei* var. *multigeniculata*	Restricted to rocky hillslopes, occurring mostly on north-facing slopes and exposed ridges. **Status:** Federal Candidate for Listing NV State Sensitive Species
Rosy two-tone beardtongue	*Penstemon bicolor* ssp. *roseus*	Occurs on rocky calcareous, granitic, or volcanic soils in washes, roadsides, or scree at outcrop bases, in rock crevices, or in similar places receiving enhanced runoff, in the creosote-bursage, blackbrush, and mixed-shrub zones. **Status:** Federal Species of Concern NV State Sensitive Species
White-margined beardtongue	*Penstemon Albomarginatus*	Occurs on sandy deposits on the leeward side of dry lakebeds between a 1,500 and a 3,600 foot elevation in the wash bottoms or outwash canyons, and occasionally on slopes above them. **Status:** Federal Species of Concern NV State Sensitive Species

Wildlife Species of Concern

Although only one ecosystem type, Mojave Desert scrub, is represented in the NCA, it supports a variety of wildlife species. The actual number of wildlife species occurring within the Sloan Canyon NCA is unknown; however, vertebrate wildlife species found within the NCA's borders represent three major classes: reptiles, birds, and mammals. Because there are no natural perennial water sources, no known

fish or mollusks species occur. One amphibian species, the red spotted toad (*Bufo punctatus*), can be found in temporary pools near the wildlife water development (guzzler) (Hardenbrook, personal communication 2005).

The primary natural factors that influence wildlife distribution and population numbers are water availability, vegetation, topography, and weather patterns. Water supplies, both above and below ground, are limited within the Sloan Canyon NCA, with springs and seeps serving as areas of habitat concentrations. The NCA contains small caves in igneous rocks that serve as habitat or escape cover for a variety of species. In addition to natural factors in the NCA, human presence and activities such as recreation use affect wildlife distribution and life history patterns.

Mammals. Small mammals expected to occur within the Sloan Canyon NCA include the black-tailed jackrabbit (*Lepus californicus*), desert cottontail (*Sylvilagus audubonii*), desert kangaroo rat (*Dipldomys deserti*), rock squirrel (*Citellus variegates*), and antelope ground squirrel (*Ammuspermophhilus leucurus*). Bat species, including the big free-tailed bat (*Tadarida macrotis*) and the Mexican free-tailed bat (*Tadarida brasiliensis*), are known to occur in small caves within the NCA (Nevada Bat Working Group 2002b).

Large mammal species include the coyote (*Canis latrans*), kit fox (*Vulpes macrotis*), desert bighorn sheep (*Ovis canadensis nelsoni*), mule deer (*Odocileus hemionus hemionus*), bobcat (*Lynx rufus*), and mountain lion (*Felis concolor*).

Birds. Bird species expected to occur within the NCA include the black-throated sparrow (*Amphispiza bilineata*), cactus wren (*Campylorhynchus bruneicaphillus*), black-chinned hummingbird (*Archilochus alexandri*), Anna's hummingbird (*Calypte anna*), broad-tailed hummingbird (*Selasphorus platycercus*), Gambel's quail (*Callipepla gamebelii*), mourning dove (*Zenaida macroura*), greater roadrunner (*Geococcyx californianus*), phainopepla (*Phainopeopla nitens*), loggerhead shrike (*Lanius ludovicianus*), red-tailed hawk (*Buteo jamaicensis*), and Swainson's hawk (*Buteo swainsoni*).

Reptiles. Reptiles are the most common and diverse species within the Sloan Canyon NCA. Lizards are expected to occur within the NCA include the desert iguana (*Dipsosaurus dorsalis*), chuckwalla (*Sauromalus obesus*), western banded gecko (*Coleonyx variegates*), collared lizard (Crotaphytus *collarus*), side-blotched lizard (*Uta stansburiana*), Gila monster (*Heloderma suspectum*), desert horned lizard (*Phyrnosoma platyrhinos*), long-nosed leopard lizard (*Gambelia wislizenii*), and long-tailed brush lizard (*Urosaurus graciosus*). Snakes expected to occur within the NCA include the coachwhip (*Masticophis flagellum*), Mojave rattlesnake (*Crotalus scutulatus*), sidewinder (*Crotalus cerastes*), speckled rattlesnake (*Crotolus muertensis*), western patch-nosed snake (*Salvadora hexalepis*), long-nosed snake (*Rhinocheilus lecontei*), and spotted leaf-nosed snake (*Phyllorhynchus decrutatus*). The desert tortoise (*Gopherus agassizi*) is the only tortoise located within the NCA.

VI. ISSUES OF CONCERN

Within the Sloan Canyon NCA RMP, there are several issues of concern that could affect the management of the landscape and subsequently the species.

Wilderness

Clark County Act, Title II ("Wilderness Areas") designated the North McCullough Wilderness on November 6, 2002. This 14,763-acre wilderness is located entirely within the southwest portion of the

NCA in the northern half of the McCullough Range. Wilderness is a unique component of the National Wilderness Preservation System because it is less than 15 miles south of Las Vegas.

The North McCullough Wilderness is roughly triangular in shape and spans approximately 6 miles at both its longest and widest points. The eastern boundary follows the crest of the escarpment whose base forms the eastern edge of the NCA. The volcanic features that rim Hidden Valley define the western boundary, and the northern boundary crosses Sutor Hills, Sloan Canyon, and a large basin that drains the western portion of the escarpment.

The Wilderness contains the Sloan Canyon Petroglyph Site and other prominent features such as Sutor and Hanna Peaks. Currently, the main access to the Wilderness is limited to several vehicle routes approaching from the northwest in the Sloan Canyon area and from the southwest from Hidden Valley. These routes access Sloan Canyon and the wash leading to the Sloan Canyon Petroglyph Site.

Despite its proximity to a largely populated urban area, the portion of the Wilderness outside the Petroglyph Management Area (Figure L.7) possesses good solitude opportunities due to the historically low levels of visitor use; lack of trails and other developments; as well as topography that provide some natural screening from the adjacent urban area or other wilderness users. A lesser degree of solitude is available within the Petroglyph Management Area as this area has the heaviest visitation within the Wilderness. The primeval character of the entire Wilderness is essentially intact except for the occurrence of some introduced plants, primarily annual grasses.

Recreation Management

Recreational use in the Sloan Canyon NCA under the preferred alternative would include (1) hiking, (2) equestrian use, (3) mountain biking, (4) camping, (5) rock climbing, and (6) dog exercise. Specific actions for each include—

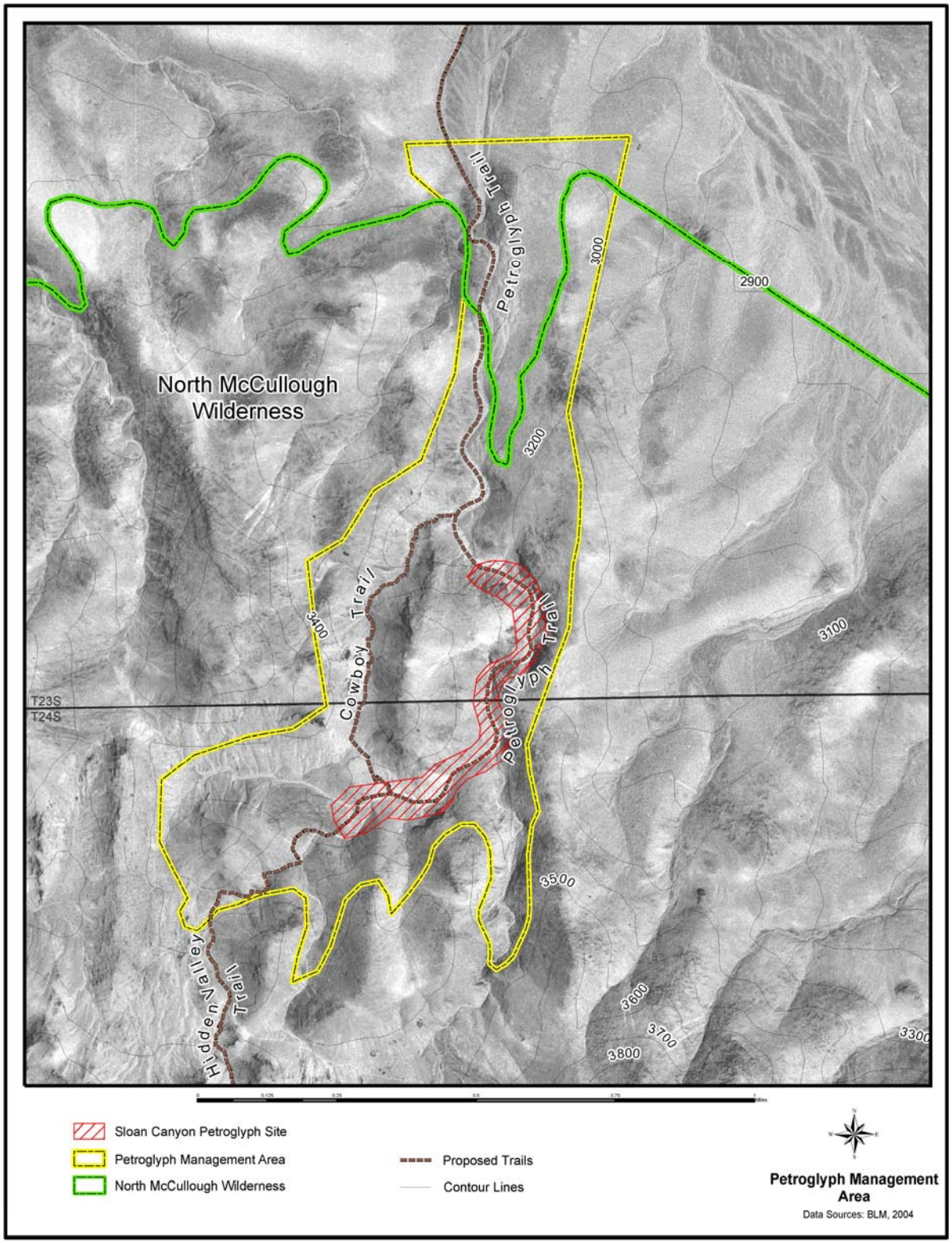
Hiking. Cross-country hiking would be allowed in the NCA, including in the Wilderness. In certain designated areas, it would be allowed until trails are established and constructed, after which some of the area might be restricted to hiking on trails (Figure L.4). Five new trails are proposed in the RMP—

- Petroglyph Trail
- Cowboy Trail
- Hidden Valley Trail
- Anthem Trail System
- North McCullough Trail
- Unnamed Trail (east-west power line road)

Additional trails would be added to the system as need arose, provided that the design and construction of a new trail would not have substantial impacts on sensitive cultural, and natural resources, and/or wilderness character. Site-specific resource conditions would be considered in selecting trail locations and designating trail features.

Equestrian Use. In designated areas, cross-country equestrian use would be allowed until trails are established and constructed, after which equestrian use might be restricted to designated trails. In some other areas, cross-country use would be allowed. Equestrian use would be prohibited in the remainder of the NCA (Figure L.5). Horse feed and hay would have to be certified to be weed-free to prevent the spread of noxious and invasive weeds. Watering of horses and pack animals would be prohibited at

Figure L.7. Petroglyph Management Area



wildlife water developments, and horse and pack animal waste would have to be removed in trailhead areas.

Mountain Biking. Mountain biking would be allowed on designated roads and trails (Figure L.6).

Camping/Campfires. Primitive, dispersed camping would be allowed in designated areas of the NCA (Figure L.8). Campfires would be allowed only at camping sites, using fire pans or fire blankets, and all fuels would have to be packed in and packed out. No natural fuels in the NCA could be used for campfires. BLM encourages the use of portable stoves for preparing meals.

Rock Climbing. Bouldering and traditional rock climbing (no permanent anchors) would be allowed throughout the NCA, including the Wilderness, except at the Petroglyph Management Area and its northern access and in identified sensitive resource areas.

Dogs. Dogs would be allowed on leash in designated areas, but prohibited from the remainder of the NCA (see Figure L.9). Dog feces would have to be immediately picked up and packed out.

Special Recreation Permits. SRPS would be issued in the NCA, but no competitive or vending SRPs would be issued for the Wilderness. Commercial SRPs would be issued on a case-by-case basis for guides and outfitters. Organized groups would be required to obtain an SRP on a case-by-case basis for group activities outside the Petroglyph Management Area.

Geocaching, recreational target shooting, rockhounding, and OHV use would not be allowed in the Sloan Canyon NCA.

Hunting. Hunting is prohibited in the Petroglyph Management Area and its northern access, but is allowed throughout the remainder of the NCA in accordance with Nevada hunting regulations. Hunting dogs are allowed off-leash in hunting areas.

Transportation

The North McCullough Road, when constructed, as well as Dutchman Pass Road, Quo Vadis Mine Road, and Rattlesnake Canyon Road, would be open for registered vehicles (Figure L.10). All other roads and routes would be closed to the public.

Grazing Management

The Hidden Valley Allotment is the only allotment open to livestock grazing within the Sloan Canyon NCA. Most of the Hidden Valley Allotment is outside the NCA and therefore is not affected by the proposed actions. A portion of the allotment extends north into the NCA and the North McCullough Wilderness. The *Proposed Las Vegas Resource Management Plan and Final Environmental Impact Statement* (BLM 1998) addresses the baseline grazing conditions within the NCA.

Grazing on the Hidden Valley Allotment is ephemeral, based on climatic conditions and grass production. The permittee can graze the allotment if the BLM Las Vegas Field Office determines that forage conditions are suitable for livestock grazing. The permittee does not forfeit the ability to apply if no permit application is made or if allotted forage is not used. Domestic livestock use is limited to cattle. Over the past 13 years, the number of cattle allowed to graze on the allotment has ranged from 40 to 100 animals.

Figure L.8. Camping

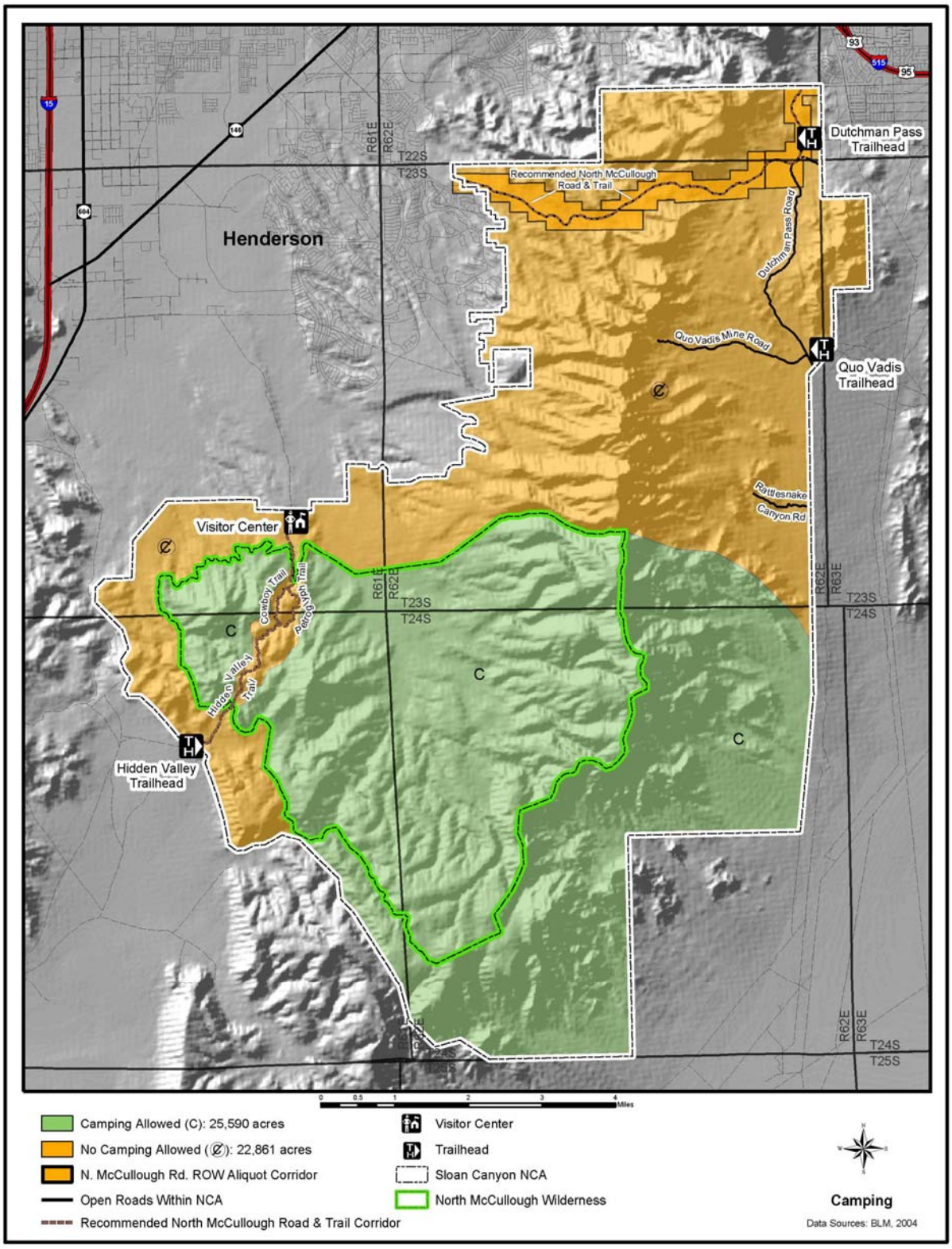


Figure L.9. Dogs

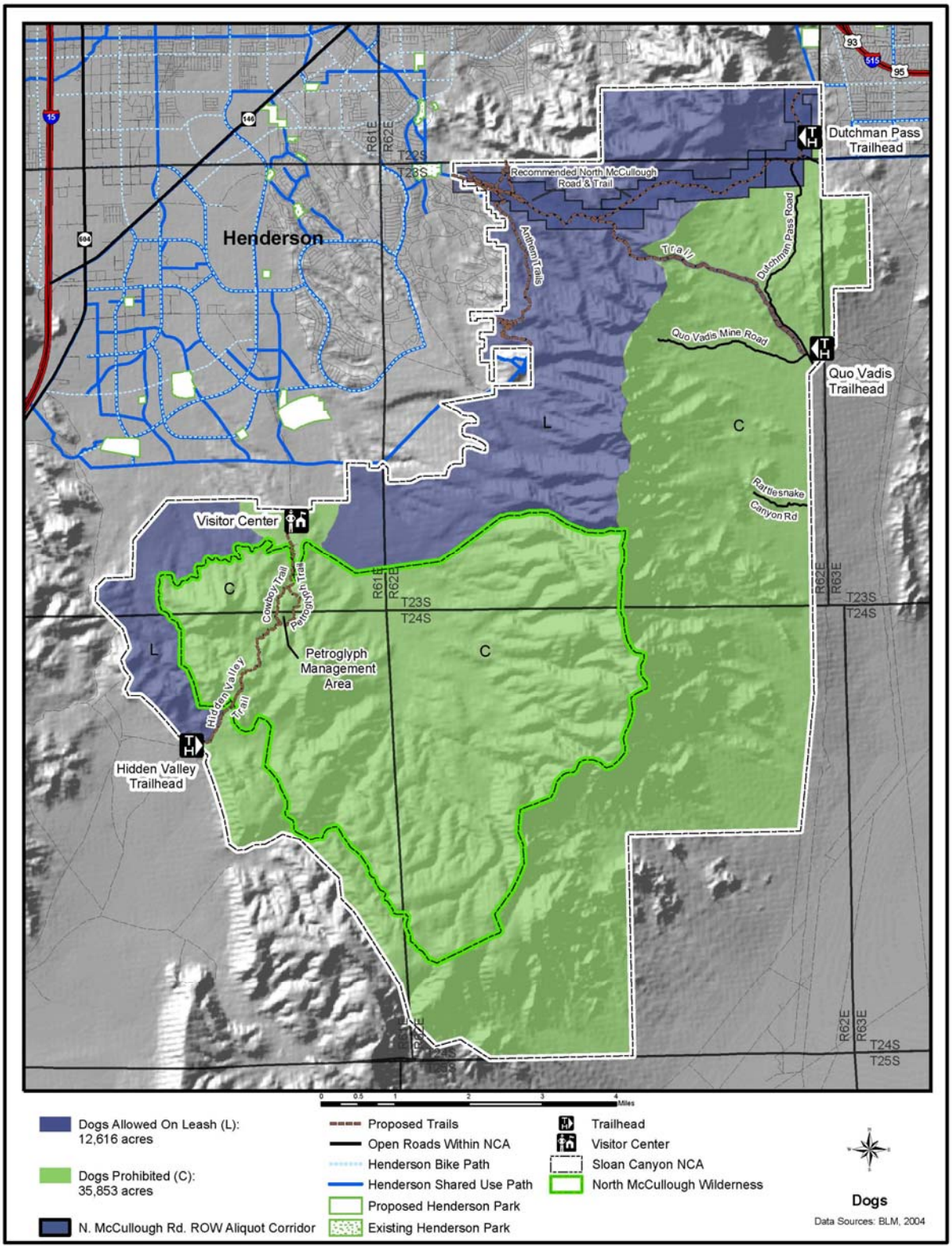
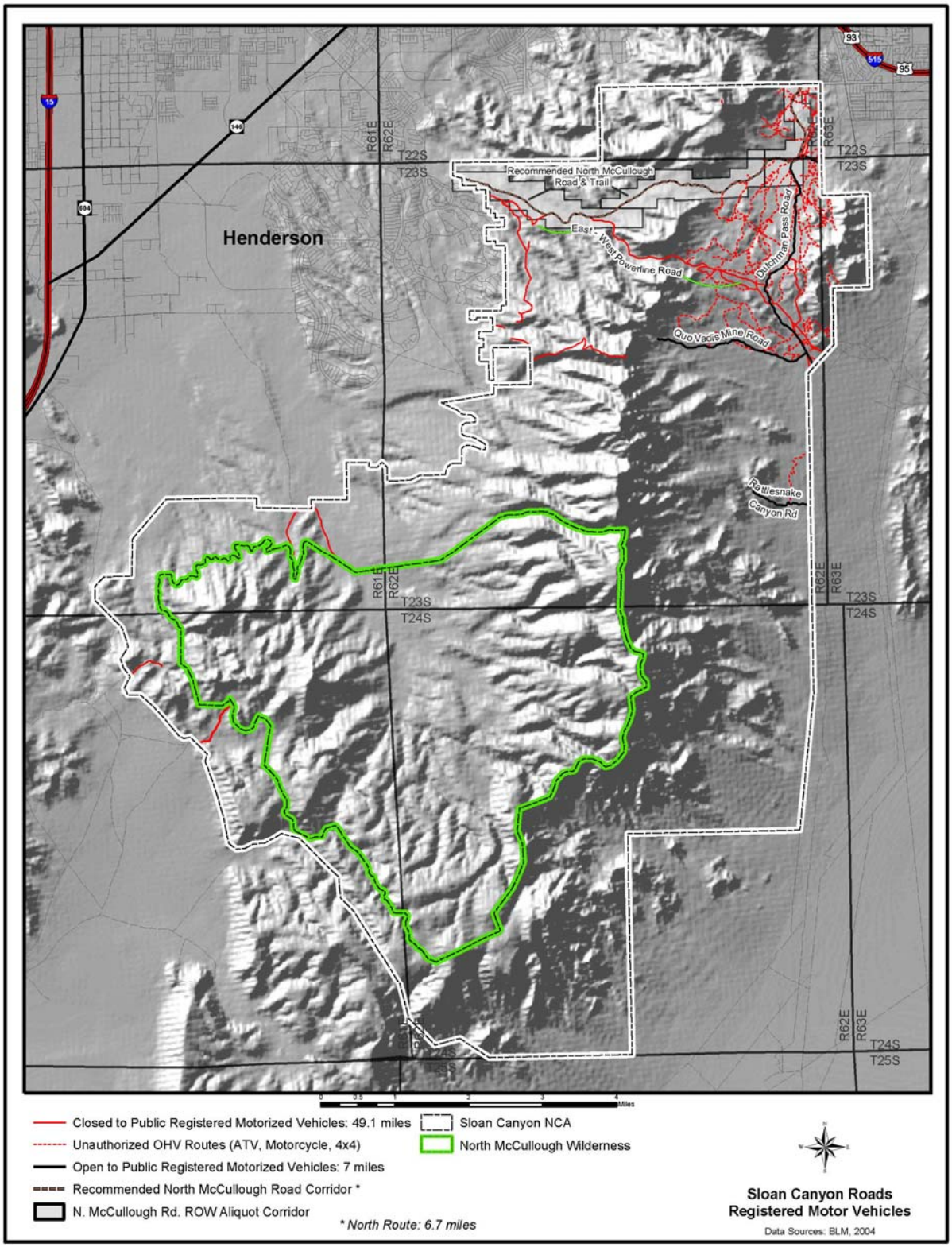


Figure L.10. Sloan Canyon Roads Registered Motor Vehicles



Grazing on the Hidden Valley Allotment is supported with hauled water. Water haul locations are placed to avoid wildlife habitat and target grazing use. No water haul locations are currently located within the NCA; however, there is one adjacent to the NCA in an area of good grass production. Roads that access water haul locations support grazing, and several roads serve the allotment to the south of the NCA. Increased grazing could result in increased desertification of the NCA.

Noxious and Invasive Weeds

BLM has developed and implemented a program to address management of noxious and invasive weeds. The spread of noxious and invasive weed species contributes to the loss of habitat productivity, reduced water quality and quantity, reduced structural and species diversity, and loss of wildlife-specific habitats. To minimize the potential for non-native seeds' being brought into the area, NDOW has issued guidance to hunters regarding the use of animal feed (NDOW 2003).

Most, if not all, non-native plant infestations begin as small outbreaks in disturbed areas, such as utility corridors, trails, range improvement footprints, roadsides, ROWs, and mining disturbances. Seeds of non-native plants can also be transported into the area in feed for pack animals, by recreational use, or in re-vegetation grass mixtures or can be blown in from distant sources. As non-native plants find disturbed areas with no natural competition, they quickly spread, overtaking native vegetation and reducing the biological diversity and ecologic viability of the ecosystem. Invasive species, such as red brome (*Bromus madritensis*), are widespread throughout the NCA and could alter wildland fire cycles (Simonin 2001).

Although a survey has not been completed, an immediate concern is the potential noxious species invasion of Sahara mustard (*Brassica tournifortii*), which utilizes sandy soils at lower elevations, and tamarisk (*Tarmarix* spp.), which could occupy wash bottoms.

Mineral Development

The Sloan Canyon NCA Act specifically addresses mining claims and states that, except for "valid existing rights, all public land … is withdrawn from … location, entry, and patent under the mining laws; and operation of the mineral leasing, mineral materials and geothermal leasing laws." Therefore, only valid, existing mineral claims are recognized for this planning purpose.

No economic metallic minerals, uranium, thorium, or economically viable nonmetallic mineral deposits have been found within the NCA (Great Basin GEM 1983). Inside the eastern boundary of the NCA, the Railroad Pass District produced a limited amount of gold from the Quo Vadis mine. Gold and silver were produced in 1935 and 1936 from quartz veinlets in sheared andesite (Great Basin GEM 1983).

Within the NCA boundary, there are 11 active mining claims. These claims are located in Township 23 South, Range 61 East and are within or overlap the NCA and portions of the Wilderness. Eighteen abandoned mines have been identified within the NCA, with 15 secured by backfilling.

Lands and Realty

The Sloan Canyon NCA Act withdraws the NCA from all forms of entry and appropriation under the public land laws, while protecting existing rights, such as power line ROWs. The issuance of ROWs, permits, and leases may continue under the Act, provided that they further the purpose of the NCA; issuance is also subject to the restrictions of other laws, such as the Wilderness Act of 1964, and existing BLM management actions. All lands within the Sloan Canyon NCA boundary are managed by BLM; there are no private inholdings.

Based on BLM records, 44 existing ROWs were on file when the NCA was designated (BLM 2004c). Several pending applications were in process when the Act was passed and are now being completed. The ROWs primarily cover power lines, flood control facilities, access roads, and communication sites and are confined primarily to the northern and eastern portions of the NCA.

The City of Henderson holds ROWs for two roads and two trails. The ROW for the existing road is for access to a flood control facility, and two new trail ROWs were granted as part of the Sloan Canyon Act (Anthem Trail and North McCullough Road and Trail).

Outside the Wilderness, applications for new linear or site-type ROWs or any amendments to existing ROWs would be considered on a case-by-case basis within the NCA, if the action furthers the purpose of the NCA in accordance with Section 602 of the Sloan Canyon NCA Act.

VII. EFFECTS OF THE PREFERRED ALTERNATIVE ON LISTED SPECIES

Direct Effects

The plant communities that are present within the Sloan Canyon NCA provide habitat for the federally listed threatened desert tortoise. Desert tortoises are known to occur throughout the Nevada and southern California deserts.

Recreation. Designation of an additional 17,816 acres as a semiprimitive nonmotorized Management Emphasis Area would result in increased preservation of wildlife habitat characteristics in the NCA because of avoidance of facility construction and prohibition of motorized vehicles. The entire NCA would be closed to OHV use, which would eliminate mortality and noise harassment to animals and eliminate loss of habitat.

Focusing hiking to designated and constructed trails in areas bordering the northern portions of the NCA where there is increased population would reduce impacts on wildlife by concentrating human presence, as well as reducing the likelihood that wildlife would become habituated to humans in the area. BLM would locate trails to avoid sensitive wildlife habitat and visitor impacts

In the northern portions of the NCA, equestrian use would be limited to designated trails, once constructed, which would reduce effects on wildlife by concentrating human use.

Mountain biking would be restricted to designated multiple-use trails and vehicle roads. Primitive and dispersed camping would be restricted to the southern portions of the NCA, with specific actions taken to limit vegetation trampling and human disturbance. Rock climbing and bouldering would be limited to areas outside the sensitive resource areas in the NCA, with avoidance of known raptor nesting areas. Dogs would be required to be on a leash in the designated areas and would be prohibited in the remainder of the NCA.

Wilderness Management. The Proposed Action would allow hiking and equestrian use throughout the Wilderness. This could result in temporary disturbance of wildlife from dispersed human presence and could result in decreased reproductive fitness for breeding bighorn sheep, alteration of raptor distribution and breeding, and alteration of wildlife habitat. The level of disturbance would depend on the amount of visitor use in the area and would likely be higher in the northern portion of the NCA. All dogs would be prohibited from the Wilderness.

Transportation. Registered motorized vehicles would be allowed only on the North McCullough Road, if constructed, and the Dutchman Pass, Quo Vadis Mine, and Rattlesnake Canyon Roads. This would result in long-term reduction of localized noise and disturbance to wildlife from traffic.

Facilities Development. Developed access points to the NCA would include the northern entrance of Sloan Canyon, Hidden Valley Trailhead, Dutchman Pass Trailhead, and Quo Vadis Trailhead. Specific disturbances for each of these facilities would include—

- Northern Entrance of Sloan Canyon. A visitor center would be constructed near the NCA boundary at the north entrance to Sloan Canyon. The total disturbed area is estimated to be 20 acres, including a parking area.
- Hidden Valley Trailhead. The total disturbed area is estimated to be 10,500 square feet and would include a surfaced lot, an interpretative kiosk, and a vault toilet.
- Dutchman Pass Trailhead. The total disturbed area is estimated to be 22,500 square feet and would include a surfaced lot, an equestrian staging area, an interpretive kiosk, and a vault toilet. This trailhead would be constructed near the northeastern boundary of the NCA at Dutchman Pass.
- Quo Vadis Trailhead. Total disturbed area is estimated to be ½ acre and would include a surfaced parking lot, an interpretive kiosk, and a vault toilet.

These developments would result in permanent loss of creosote/grassland habitat. No known areas of sensitive plant or animal habitats would be directly affected by the planned development actions. Increased human use at these areas would result in increased disturbance to animals and trampling of soil and vegetation.

Vegetation and Wildlife Management. BLM would manage vegetation to promote native plant communities and restore plant productivity of disturbed areas through rehabilitation and revegetation, which would provide for the long-term improvement of wildlife habitat.

Casual and commercial collection of reptiles would be prohibited within the Sloan Canyon NCA. This would result in reduction in direct impacts on reptiles and reduced surface disturbance associated with collection activities.

NDOW would continue to manage the hunting programs for the desert bighorn sheep and to maintain the water guzzlers in the NCA.

Indirect Effects

Indirect impacts could come about through habitat degradation from soil compaction and loss of vegetation caused by licensed vehicles' straying off of designated roads (i.e., straying outside the boundaries of existing paved and dirt roads). On most of the Sloan Canyon NCA, activities would be limited to existing roads. The width of an individual route segment would be smaller than the existing road width (road berms are not included as part of the road width or surface area), making it unlikely that impacts would occur within the boundaries of existing paved and dirt roads. All surface disturbances would be expected to be confined to existing ROWs and access areas.

Cumulative Effects

Cumulative effects would include the effects of future State, tribal, local, or private actions that are reasonably certain to occur in the action area considered in this Biological Assessment. Future federal actions that are unrelated to the Proposed Action are not considered in this section because they require separate consultation pursuant to section 7(a)(2) of the ESA. Although single actions are insignificant by themselves, impacts could accumulate over time from various actions. That combination of impacts could negatively or positively affect lands and resources.

The following were identified as the primary factors affecting Special Status Species within the Sloan Canyon NCA:

1. **Changes in Ecosystem Structure and Function**

   Ecosystem structure and function have been changed and would continue to be changed in the project area by a variety of human activities. Planned and unplanned road development has affected drainage patterns and dispersal corridors, resulting in changes to species movement patterns and sustainability of ecosystem processes.

   Noxious weeds spread by vehicles, people, and livestock would populate disturbed areas and allow establishment of invasive plant species in areas previously not infested.

2. **Changes in Habitat (Loss, Fragmentation, Degradation)**

   There are several activities within the project area that could change species habitat. They include, but are not limited to, road development, livestock management, tourism, recreation, and vehicle use. These activities result in the direct removal of habitat or a reduction in use of remaining habitat due to the initial or ongoing disturbance. Habitat fragmentation and disturbance often result in impediments in habitat linkages and dispersal corridors.

3. **Human-Induced Mortality**

   An increasing human population, including increases in travel on highways, roads, and trails and increased access to Special Status Species habitat, elevates the risk of death to desert tortoises due to vehicle collisions, collection, poaching, and other interactions with humans. Deaths from relocation of desert tortoises and other species could also contribute to mortality.

   Changes in the Mojave Desert ecosystem, changes in habitat, and human-induced mortality would likely increase and expand as the population of the Las Vegas area continues to grow. These factors are, to varying degrees, affecting the desert tortoise and other Special Status Plant and Animal Species and their habitats. Considering past, present, and reasonably foreseeable trends for activities in the region, it is likely that there would be insignificant cumulative impacts on listed species from implementation of the Sloan Canyon RMP.

   Implementation of the Sloan Canyon RMP with the outlined conservation measures should reduce potential impacts on insignificant to discountable levels. Loss of individual species of plants and animals is expected to be minimal under the Sloan Canyon RMP because (1) Special Status Species considerations were integrated into the program plan of action and (2) conservation measures have been identified to help reduce risk and potential losses.

VIII. DETERMINATION

Take, in the form of desert tortoise injury or mortality, could occur because of collisions with vehicles. The likelihood of this occurring within the Sloan Canyon NCA would be would be low because impacts from vehicles would be confined to the narrow width of the route boundaries of the roads available for access.

The determination made is *May Affect, Likely to Adversely Affect* the desert tortoise based on designating roads and the resulting increased access to desert tortoise habitats within the Sloan Canyon NCA. Given the low population density of the Mojave Desert tortoise population within the Sloan Canyon NCA, this population cannot handle loss of population. Reduction of desert tortoise numbers would lead to significant loss of population viability if take were to occur. Implementing the proposed conservation actions could mitigate these actions.

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